BA-U-COV-00010

PTO/SB/01 (08-03)

Approved for use through 07/31/2006. OMB 0651-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

**DECLARATION FOR UTILITY OR** 

Attorney Docket Number

| DESIGN   |                             |                       | First Named Invent | Robert 7         | . Bigelow      |               |
|--|-----------------------------|-----------------------|--------------------|------------------|----------------|---------------|
| PATENT APPLICATION   |                             |                       |                    | COMPLETE IF      | KNOWN          |               |
| (37 CFR 1.63)  |                             |                       | Application Number | •                |                |               |
| Declaration Submitted With Initial   | Declaration                 | tion                  | Filing Date        |                  |                |               |
|  | Filing (s                   | surcnarge             | Art Unit           |                  | -              |               |
| Filing   | (37 CFR 1.16 (e)) required) |                       | Examiner Name      |                  |                |               |
|  |                             |                       |                    |                  |                |               |
| I hereby declare that:   |                             |                       |                    |                  |                |               |
| Each inventor's residence, mailing address, and citizenship are as stated below next to their name.  |                             |                       |                    |                  |                |               |
| I believe the inventor(s) name which a patent is sought on the   |                             |                       | nventor(s) of the  | subject matter w | hich is claime | d and for     |
| COVER FOR USE WI   |                             |                       | NII AD STDI        | ICTURE           |                |               |
| COVERT OR USE WI   | I FI AIN IINF               | LATABLE WIOL          | OLAN SINC          | JOTONE           |                |               |
|  |                             |                       |                    |                  |                |               |
|  |                             |                       |                    |                  |                |               |
| Al   |                             | (Title of the I       | nvention)          |                  |                |               |
| the specification of which   |                             |                       |                    |                  |                | ·             |
| is attached hereto   |                             |                       |                    |                  |                |               |
| OR   |                             |                       |                    |                  |                |               |
| was filed on (MM/DD/Y  |                             |                       |                    |                  |                |               |
| was filed on (MM/DD/YYYY) as United States Application Number or PCT International   |                             |                       |                    |                  |                |               |
| Application Number and was amended on (MM/DD/YYYY) (if applicable).  |                             |                       |                    |                  |                |               |
| I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as  |                             |                       |                    |                  |                |               |
| amended by any amendment specifically referred to above.   |                             |                       |                    |                  |                |               |
| I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for   |                             |                       |                    |                  |                |               |
| continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.                                       |                             |                       |                    |                  |                |               |
| I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent,  |                             |                       |                    |                  |                |               |
| inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign |                             |                       |                    |                  |                |               |
| application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing dat before that of the application on which priority is claimed.   |                             |                       |                    |                  |                |               |
| Prior Foreign Application  | n which priority            | Foreign Filing        | Data I             | Priority         | Contided Co    | ppy Attached? |
| Number(s)  | Country                     | (MM/DD/YYY            |                    | ot Claimed       | Yes            | No No         |
|  |                             |                       |                    |                  |                |               |
|  |                             |                       |                    |                  |                | $\Box$        |
|  |                             |                       |                    | Ħ                | ΙĦ             |               |
|  |                             |                       |                    | H                |                |               |
| Additional foreign analicat  | ion numbers ==              | a liated on a sussiti | nantal neissies i  |                  | )/02D - 11 - 1 | <u> </u>      |
| Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.  |                             |                       |                    |                  |                |               |

[Page 1 of 2]

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 21 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

## **DECLARATION** — Utility or Design Patent Application

| Direct all correspondence to: Customer Number:  |                                       |             |        |                       | OR             | V           | Corresp | pondence address below |                  |
|---|---------------------------------------|-------------|--------|-----------------------|----------------|-------------|---------|------------------------|------------------|
| Name  |                                       |             |        |                       |                |             |         |                        |                  |
| Franklin E. Gibbs, Esq.   |                                       |             |        |                       |                |             |         |                        |                  |
| Address<br>1899 W. Brooks AVe.  |                                       |             |        |                       |                |             |         |                        |                  |
| City  | City                                  |             |        | State                 | State          |             |         |                        | ZIP .            |
| North Las Vegas   | orth Las Vegas · NV · . 89032         |             |        |                       |                | 89032       |         |                        |                  |
| Country   | Country Telephone                     |             |        |                       |                | Fax         |         |                        | •                |
| USA   |                                       | (702) 639-  | -4440  |                       | (702) 639-0881 |             |         |                        |                  |
| I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon. |                                       |             |        |                       |                |             |         |                        |                  |
| NAME OF SOLE OR FIRST IN  | VENTOR:                               |             | Ар     | etition               | has be         | en filed    | for thi | s unsiar               | ned inventor     |
| Given Name  |                                       |             |        |                       | F              | amily N     | lame    | <u> </u>               |                  |
| (first and middle [if any])<br>Hobert I.  |                                       |             |        | or Surname<br>Bigelow |                |             |         |                        |                  |
| Inventor's Signature  | F Bu                                  | 10/sur      |        | ,                     | 1              |             |         |                        | Date 29213       |
| Residence: City   | State                                 | -           | 1      | Coun                  | itry           |             |         | Citizer                | nship            |
| Las Vegas   | Nevada O                              |             |        | USA                   | -              |             |         | USA                    | ,                |
| Mailing Address<br>1899 W. Brooks Ave.  |                                       |             |        |                       |                |             |         | <u> </u>               |                  |
| City  | State                                 |             |        | ZIP                   |                |             |         |                        | Country          |
| North Las Vegas   | NV                                    |             |        |                       | 89032          |             |         | USA                    |                  |
| NAME OF SECOND INVENTOR:  A petition has been filed for this unsigned inventor  |                                       |             |        |                       |                |             |         |                        |                  |
| Given Name  |                                       |             |        | Fa                    | mily Na        | ame         |         | ***                    |                  |
| (first and middle [if any])<br>NA   |                                       |             |        |                       | Surnan         |             |         |                        |                  |
| Inventor's<br>Signature   |                                       |             |        |                       |                |             |         |                        | Date             |
| Residence: City   | State                                 |             |        | Country               |                | Citizenship |         |                        |                  |
| Mailing Address   | · · · · · · · · · · · · · · · · · · · |             |        |                       |                |             |         |                        |                  |
| City  | State                                 |             |        |                       | ZIP Cou        |             | Countr  | гу                     |                  |
| Additional inventors or a legal rec   | oresentative are bei                  | ng named on | ithe s | suppleme              | ental shee     | at(s) PTO   | /SB/02A | or 02i R a             | attached hereto. |

PTO/SB/81 (09-03)
Approved for use through 11/30/2005. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number

## POWER OF ATTORNEY and CORRESPONDENCE ADDRESS INDICATION FORM

| Application Number     |                   |  |
|------------------------|-------------------|--|
| Filing Date            |                   |  |
| First Named Inventor   | Robert T. Bigelow |  |
| Title                  |                   |  |
| Art Unit               |                   |  |
| Examiner Name          |                   |  |
| Attorney Docket Number | BA-U-COV-00010    |  |

| I hereby appoint:  |  |                    |                     |                                   |  |
|--|--|--------------------|---------------------|-----------------------------------|--|
| Practitioners associated with the Customer Number:   |  |                    |                     |                                   |  |
| OR   | L  |                    |                     |                                   |  |
| Practitioner(s) named below:   |  |                    |                     |                                   |  |
|  | Registration Number                                      |                    |                     |                                   |  |
| Franklin E. Gibbs, Esq.  |  | 44,709             |                     |                                   |  |
|  |  |                    |                     |                                   |  |
|  |  |                    |                     |                                   |  |
|  |  |                    |                     |                                   |  |
| as my/our attorney(s) or agent(s) Trademark Office connected the   | s) to prosecute the application identified a<br>erewith. | above, and to tr   | ransact all busines | s in the United States Patent and |  |
| Please recognize or change the   | correspondence address for the above-                    | -identified applic | cation to:          |                                   |  |
| The address associate  | ed with the above-mentioned Customer N                   | Number:            |                     |                                   |  |
| OR   |  |                    |                     |                                   |  |
| The address associate  | ed with Customer Number:                                 |                    |                     |                                   |  |
| OR   |  |                    |                     |                                   |  |
| Firm or Individual Name  | Bigelow Aerospace  |                    |                     |                                   |  |
| Address  |  |                    |                     |                                   |  |
| Address  | 1899 W. Brooks Ave.                                      |                    |                     |                                   |  |
| City   | North Las Vegas  | State              | NV                  | Zip 89032                         |  |
| Country  | USA  |                    |                     |                                   |  |
| Telephone I am the:  | (702) 639-4440   | Fax                | (702) 639-0881      |                                   |  |
| Applicant/Inventor.  Assignee of record of the entire interest. See 37 CFR 3.71.   |  |                    |                     |                                   |  |
| Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)   |  |                    |                     |                                   |  |
| SIGNATURE of Applicant or Assignee of Record   |  |                    |                     |                                   |  |
| Name Robert T. Bigelow   |  |                    |                     |                                   |  |
| Signature Tolled A 5 tallau  Date Telephone (702) 639-4440   |  |                    |                     |                                   |  |
| I vac. a   | 100.27,000   |                    |                     |                                   |  |
| NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*. |  |                    |                     |                                   |  |
| *Total of 1 forms are submitted.   |  |                    |                     |                                   |  |

This collection of information is required by 37 CFR 1.31 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application:

Number not assigned as of the

date of this petition.

Art Unit Number: Not yet assigned

Filing Date:

First Named Inventor:

Robert T. Bigelow

Title:

Cover for use with an Inflatable

Modular Structure

Filing Date:

Confirmation Number:

Not yet assigned

: DECLARATION OF ROBERT T.

: BIGELOW IN SUPPORT OF THE

: PETITION TO MAKE SPECIAL AND

: ADVANCE EXAMINATION PURSUANT

TO 37 CFR §1.102

**DECLARATION OF ROBERT T. BIGELOW** 

I, Robert T. Bigelow, do hereby declare:

I am the inventor of the cover for use with an inflatable modular structure 1. inveniton.

- I am President of Bigelow Aerospace (hereafter "Bigelow"), assignee of 2. the cover for use with an inflatable modular structure invention.
- 3. Bigelow is developing an inflatable modular human habitat (hereafter "Modular Habitat") for use in Earth Orbit. The Modular Habitat has the advantage of having an inflatable shell that is less heavy than a solid shell per cubic meter of deployed volume and thus less expensive to place into orbit. Also, while a solid shell space station cannot expand to gain more internal volume, the inflatable shell can be inflated to provide more internal working space.
- 4. Bigelow is privately funded and receives no government funding or grants toward the development of the Modular Habitat.
- 5. Bigelow has expended tens of millions of dollars in the research and development of a Modular Habitat.

- 6. The module has a flexible and inflatable multi-layered shell covering a rigid structural core. The shell can be compressed allowing the module to fit as in the payload compartment of a number of conventional lifting vehicles. When the module is placed in orbit, the shell can be inflated to many times its compressed size. When inflated, the module has more internal volume than a typical hard shell space structure of a similar launch payload size. The extra volume of the inflatable module allows for more crewmembers, equipment, and experiments. Thus, more can be accomplished with a single launch of an inflatable module than can be done with a single hard shell module.
- 7. In preparation for launch, the inflatable shell is folded around the core of the module. This is done to insure that the shell and module can fit within the payload section of a launch vehicle. The internal surface of the shell is usually a thin material that acts as an air bladder. This layer is usually susceptible to damage by being brought into contact with a rough surface. To prevent damage to the shell, a plurality of covers are attached to the core of the module that provide a smooth surface for the folded air bladder.
- 8. These covers support the folded shell and add a further degree of structural support to the core.
- 9. Once deployed into space, the shell is inflated and the covers removed from the core and placed on the inside of the shell. In this configuration, the covers act as a foundation for supporting equipment, supplies or other items as necessary.
- 10. The covers make it possible for securing the vulnerable air bladder of the shell to the core for launch. After launch the covers are integral to the operation of equipment that could be used for cutting edge experiments.
- 11. The development of a space based platform for researching various areas of science offers vast potential for identifying breakthrough technologies. This is exemplified in an article by the American Geological Institute published in 1997 and provided herein as Attachment A. This document

was downloaded from http://www.agiweb.org/legis105/spacstat.html. Reference to this document does not mean that I subscribe to everything stated in the document. The document is being offered as support to specific areas that are pertinent to this declaration.

- 12. These areas include advances in the understanding and exploration of human health and development. (Attachment A, page 1, second paragraph).
- 13. One such area is that of investigating protein crystal growth in a microgravity environment. (Attachment A, page 3 starting at the last paragraph).
- 14. Material science is another area of research. (Attachment A, page 4 starting at the second full paragraph).
- 15. With the availability of more durable materials to produce items, the items last longer and there is less need for producing replacement items.
- 16. It is interesting to note that, in general, many manufacturing and production processes rely upon water and air in some fashion. For example, air is used to facilitate combustion in the production of electricity, which in turn powers many production and manufacturing facilities. Water is routinely used for cleaning or to distribute heat.
- 17. As to combustion technology, even a modest increase in efficiency will have a dramatic impact on the economy and the environment. For example, it is estimated that a 2% increase in burner efficiency would save the U.S. \$8 billion per year. Attachment A, page 3 starting at the second full paragraph.

///

///

///

///

///

///

•••

///

Due to the current expense of placing a space station into orbit, these types 18. of experiments are usually performed by governments. The Modular Habitat will widen the demographic range of people and entities that could afford such experiments and thereby allow access for space experimentation and exploration to a wider group.

I declare under penalty of perjury under the laws of the Untied States of America that the above is accurate and true to the best of my knowledge.

Executed at 1899 W. Brooks Avenue, North Las Vegas, NV 89032, on 2003.

Mr. Robert T. Bigelow

President

Bigelow Aerospace

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

| STATEMENT UNDER 37 CFR 3.73(b)   |   |  |  |  |
|--|---|--|--|--|
| Applicant/Patent Owner: Bigelow Aerospace  |   |  |  |  |
| Application No./Patent No.:F   | iled/Issue Date:  |  |  |  |
| Entitled: Cover for use with an Inflatable Modular   | Structure   |  |  |  |
| Bigelow Aerospace , a  | (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)                     |  |  |  |
| states that it is:  1.  the assignee of the entire right, title, and interest;   |   |  |  |  |
| 2. an assignee of less than the entire right, title and The extent (by percentage) of its ownership interes in the patent application/patent identified above by virtue.   | est is%   |  |  |  |
| A. An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel, Frame, or for which a copy thereof is attached. |   |  |  |  |
| OR   |   |  |  |  |
| B. A chain of title from the inventor(s), of the patent a below:   | application/patent identified above, to the current assignee as shown                                       |  |  |  |
| The document was recorded in the United  | To: States Patent and Trademark Office at, or for which a copy thereof is attached.                         |  |  |  |
|  | То:   |  |  |  |
| The document was recorded in the United Reel, Frame  | States Patent and Trademark Office at, or for which a copy thereof is attached.                             |  |  |  |
| From: The document was recorded in the United  | To:   |  |  |  |
|  | States Patent and Trademark Office at, or for which a copy thereof is attached.                             |  |  |  |
| ☐ Additional documents in the chain of title a   | re listed on a supplemental sheet.  |  |  |  |
| Copies of assignments or other documents in the characteristic [NOTE: A separate copy (i.e., the original assignment must be submitted to Assignment Division in accordance recorded in the records of the USPTO. See MPEP 3   | ent document or a true copy of the original document)  Iance with 37 CFR Part 3, if the assignment is to be |  |  |  |
| The undersigned (whose title is supplied below) is author  | orized to act on behalf of the assignee.  Robert T. Bigelow   |  |  |  |
| Date   | Typed or printed pame /   |  |  |  |
| (702) 639-4440   | John Digelow  |  |  |  |
| Telephone number   | Signature <i>(</i>  |  |  |  |
|  | President, Bigelow Aerospace Title  |  |  |  |

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.